

BOSS RV-1000 SERVICE NOTES

First Edition

SPECIFICATIONS

The RV-1000 is a 1U rack-mount stereo Digital Reverb unit use fully digital delay systems.

Input Level/Input Impedance: (Nominal)
-20dBm/ 1Mohm (UNIGAIN at -20dBm)
+ 4dBm/40Kohm (UNIGAIN at + 4dBm)

Output Level/Output Impedance: (Nominal)
-20dBm/1.5Kohm (UNIGAIN at -20dBm)
+ 4dBm/5.7Kohm (UNIGAIN at + 4dBm)

Output Load Impedance: More than 10kohm

Frequency Response:
Direct 10Hz to 30kHz ($\pm 1\text{dB}$)
Effect 30Hz to 10kHz (+1, -3dB)

Sampling Process:
Sampling Resolution 16-bit Linear Response
Sampling Rate 31.25kHz

PRE EQ:
LOW $\pm 15\text{dB}$ at 100 Hz
HIGH $\pm 15\text{dB}$ at 10 kHz

Residual Noise:
Less than -92dBm (IHF-A)
BYPASS at OFF, UNIGAIN at -20dBm, INPUT at 10 (FCW),
OUTPUT (DIRECT, EFFECT) at 10 (FCW),
PRE EQ (LOW,HIGH) at center, MODE at SMALL ROOM 1,
DECAY TIME/GATE TIME at S (FCCW)

Power Consumption: 6.5W

Dimensions: 482(W) x 44(H) x 208(D) mm
19" x 1-13/16" x 8-1/4"

Weight: 2.5kg
5 lb. 9 oz.

Accessories (Standard):
Owner's Manual (English) (G6027102RT)
Owner's Manual (Japanese)(G6027101RT)

NOTES:

1. 0dBm is referenced to 0.775Vrms.
2. Effect devices generally operate at one of two nominal line levels, high (+4dBm) or medium (-20dBm), and so UNIGAIN switch allows you to select either a medium level input (switch "in"), or a high level input (switch "out").
3. INPUT controls permit input gain to be adjusted from $-\infty\text{dB}$ (at 0) to 0dB (at 10), and so it enables the unit to function properly with a wide range of input levels.
4. Nominal level is level enable you to obtain the best noise and distortion performance.
5. Overload indicator light up at about 3dB under signal clipping.
6. Sampling process is being used as digital technology to modify the sound.
7. With 16-bits sample, enable to distinguish 65,536 ($=2^{\text{exp}16}$) different amplitude levels, and this allows a number of steps that is matched to the amplitude range of 96dB (65,000: 1).
8. With 31.25kHz sample, allows a maximum frequency content of just over 15kHz in the wave that is being sampled.

GENERAL VIEW RV-1000 の概観図

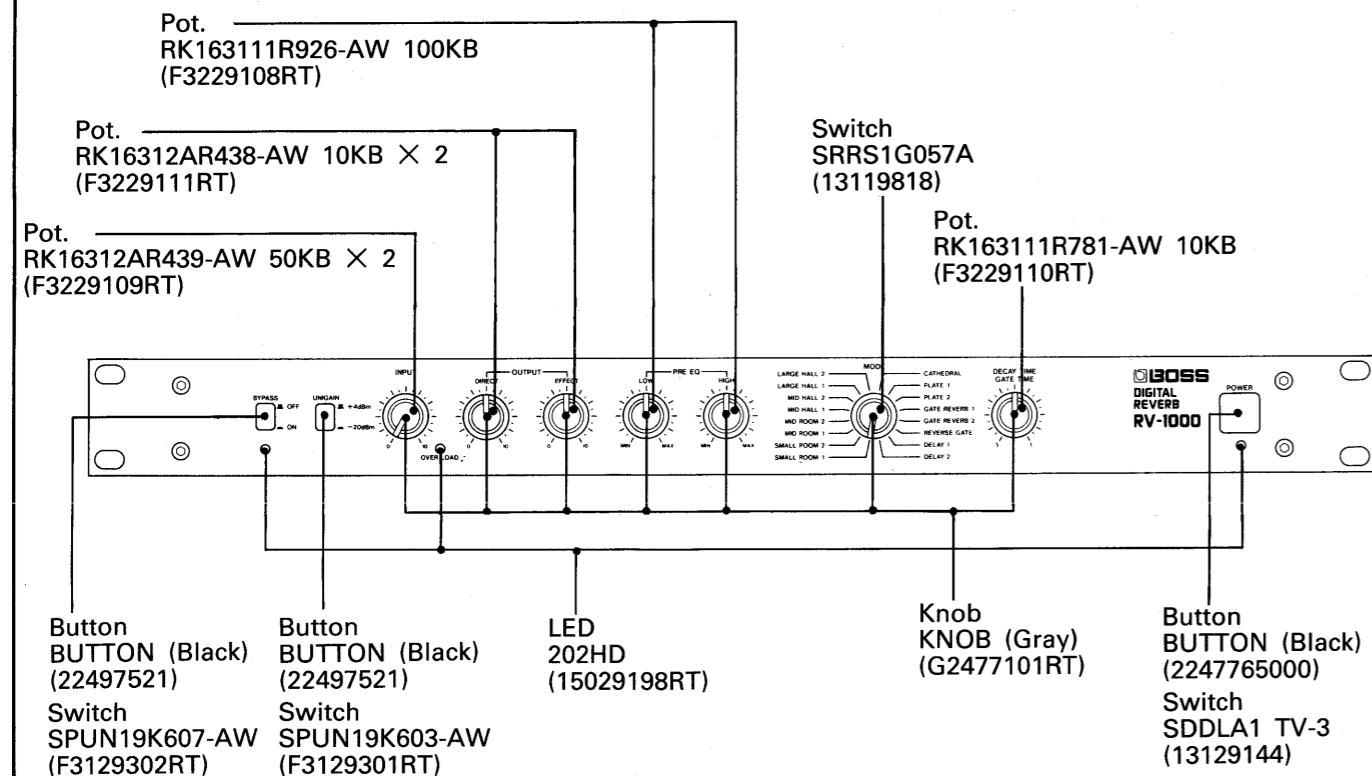


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EXPLODED VIEW/分解図

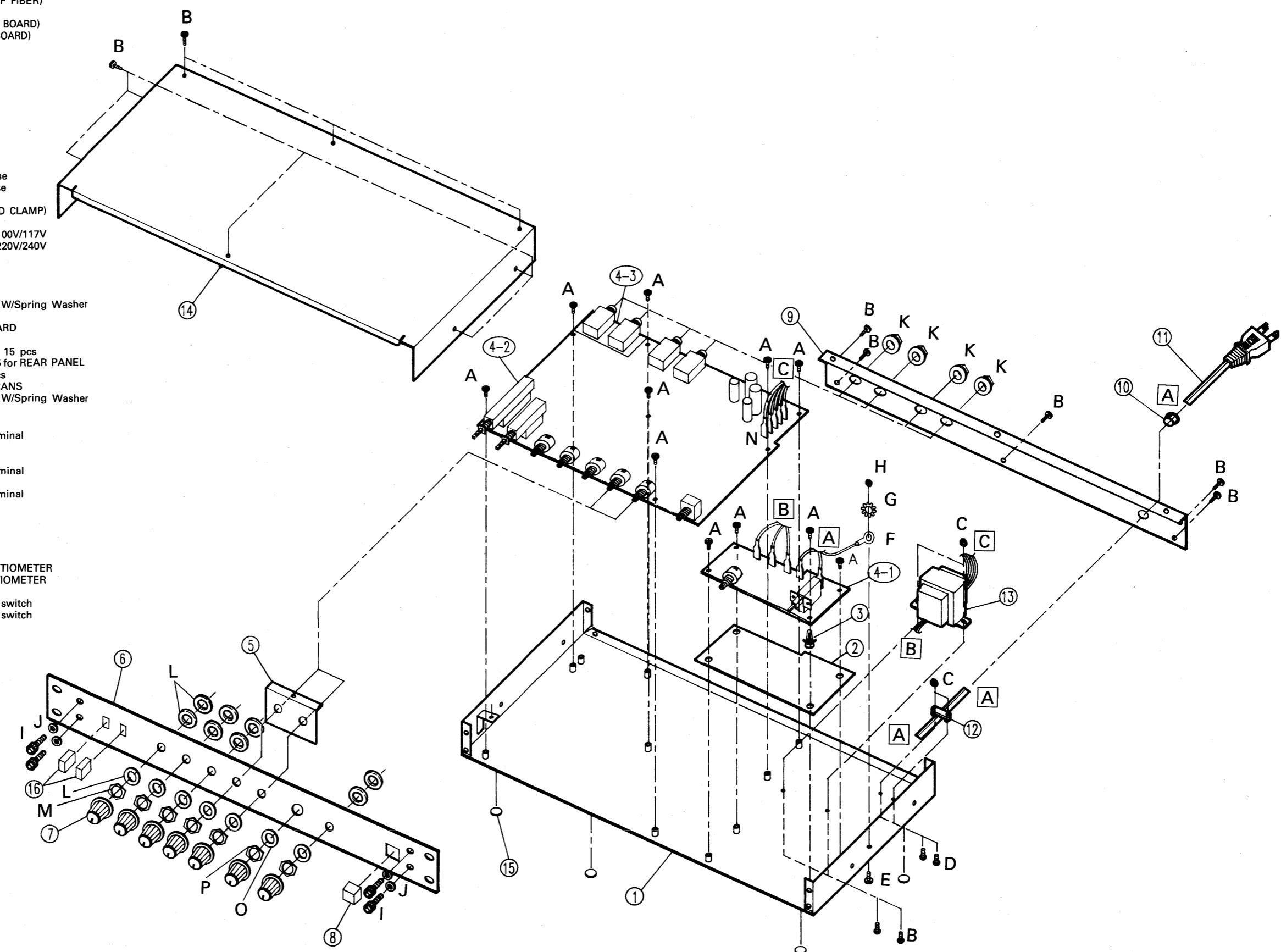
NO. PARTS NO. PARTS NAME AND DESCRIPTION

1. F2029102RT BOTTOM COVER (CHASSIS)
 2. △ H2369601RT INSULATE (INSULATION SHEET OF FIBER)
 3. F2199101RT PCB JOINT
 4-1. 7572230000 BOARD ASSY (MAIN BOARD 3/3 or POWER BOARD)
 4-2. 7572230000 BOARD ASSY (MAIN BOARD 1/3 or MAIN BOARD)
 * See PARTS LIST for details of BOARD ASSY
 5. F2129501RT TOP ANGLE (TOP COVER HOLDER)
 6. F2219101RT FRONT PANEL
 7. G2477101RT KNOB (Gray)
 8. 2247765000 BUTTON (Black)
 9. F2219102RT REAR PANEL
 10. △ F2369402RT SB-0710 CORD BUSHING
 11. AC CORD (Installed)
 △ G3497103RT LP-50 with Plug for 100V use
 △ G3497102RT SVT LP-30 with Plug for 117V use
 △ G3497101RT LP-21 with Plug for 220V use
 △ G3497104RT LP-23 with Plug for 240VA use
 △ G3497105RT 5722-660-4527 with Plug for 240VE use
 12. △ 12369410RT (or 12369410) STRAIN RELIEF 1702B (CORD BAND or CORD CLAMP)

13. Power Transformer
 △ G2457101RT 100V/117V Power Transformer for 100V/117V
 △ G2457102RT 220V/240V Power Transformer for 220V/240V

14. F2029101RT TOP COVER
 15. F2359101RT FOOT (RUBBER FOOT)
 16. 2249752100 BUTTON (Black)

A. ***** 3x6 Round Head Machine Screw Fe Cm W/Spring Washer Total 11 pcs
 7 for MAIN BOARD, 4 for POWER BOARD
 B. ***** 3x8 Binding Head Machine Screw Fe BC W/Internal Tooth Washer Total 15 pcs
 2 for POWER TRANS, 8 for TOP COVER, 5 for REAR PANEL
 C. 45039502RT M3 Hex Flange Nut Fe Cm Total 4 pcs
 2 for STRAIN RELIEF, 2 for POWER TRANS
 D. ***** 3x16 Round Head Machine Screw Fe BC W/Spring Washer 2 pcs for STRAIN RELIEF
 E. ***** 4x8 Binding Head Machine Screw Fe BC 1 pc for Ground B-6 Lug Terminal
 F. 4503970200 B-6 PIN (LUG TERMINAL)
 G. ***** M4 External Tooth Washer Fe Cm 1 pc for Ground B-6 Lug Terminal
 H. ***** M4 Hex Nut Fe Cm 1 pc for Ground B-6 Lug Terminal
 I. H5029806RT 4x10 Hex Socket Cap Screw Fe BC 4 pcs for FRONT PANEL
 J. ***** M4x0.45 Internal Tooth Washer Fe BC 4 pcs for FRONT PANEL
 K. H5039756RT Jack Nut 4 pcs for JACK
 L. ***** V.R. Accessory (Washer) 14 pcs for POTENTIOMETER
 M. ***** V.R. Accessory (Nut) 6 pcs for POTENTIOMETER
 N. H5039701RT 1741 BS-2 PIN (QUICK SLIDE TERMINAL)
 O. ***** SW. Accessory (Washer) 1 pc for MODE switch
 P. ***** SW. Accessory (Nut) 1 pc for MODE switch



PARTS LIST

| SAFETY PRECAUTIONS: | | | |
|---|--|--|--|
| The parts marked △ have safety-related characteristics. | | | |
| Use only listed parts for replacement. | | | |
| 安全上の注意: △が付いている部品は、安全上特別な規格でつくられたものです。交換の際は、指定された部品番号以外の部品は使わないようにして下さい。 | | | |
| | | | |

| CONSIDERATIONS ON PARTS ORDERING | | | |
|---|-------------|---------------|--------------|
| When ordering any parts listed in the parts list, please specify the following items in the order sheet. | | | |
| QTY | PART NUMBER | DESCRIPTION | MODEL NUMBER |
| Ex. 10 | 22575241 | Sharp Key | C-20/50 |
| 15 | 2247017300 | Knob (orange) | DAC-15D |
| Failure to completely fill the above items with correct number and description will result in delayed or even undelivered replacement. | | | |
| Parts ordering information Order sheet items must be filled correctly. Example: 必要数 パーツナンバー 品名 使用機種 例) 10 22575241 Sharp Key C-20/50 15 2247017300 Knob (orange) DAC-15D If any item is omitted, wrong, or misspelled, the part may not be delivered, causing a delay or no delivery. | | | |

| CASING ケース | | | | |
|-----------------------------------|-------------------|--|-----------------------|-------|
| F2029101RT | TOP COVER | | | |
| F2029102RT | BOTTOM COVER | (CHASSIS) | | |
| F2219101RT | FRONT PANEL | | | |
| F2219102RT | REAR PANEL | | | |
| F2129501RT | TOP ANGLE | (TOP COVER HOLDER) | | |
| KNOB, BUTTON つまみ, ぽたん | | | | |
| G2477101RT | KNOB (Gray) | INPUT, OUTPUT(DIRECT, EFFECT) PRE EQ (LOW, HIGH), MODE, DECAY | | |
| 2247765000 | BUTTON (Black) | POWER | | |
| 2249752100 | BUTTON (Black) | BYPASS, UNIGAIN | | |
| SWITCH スイッチ | | | | |
| △13129144 | SDDLA1 TV-3 | (SDDLA1039A TV-3) | POWER | SW4 |
| 13119818 | SRRS1G057A | (SRRS1G Digital Sw) | MODE | SW3 |
| F3129301RT | SPUN19K603-AW | | UNIGAIN | SW2 |
| F3129302RT | SPUN19K607-AW | | BYPASS | SW1 |
| JACK, SOCKET ジャック, ソケット | | | | |
| F3449101RT | HLJ4306-01-3010 | Phone Jack | INPUT A/B, OUTPUT A/B | JK1-4 |
| PCB ASSY 基板組立 | | | | |
| 7572230000 | RV1000 BOARD ASSY | (pcb G2927101RT) | | |
| This ASSY includes the following. | | | | |
| この基板組立には、次のものが含まれています。 | | | | |
| ***** | MAIN BOARD 1/3 | (MAIN BOARD) | (pcb G2927101RT 1/3) | |
| ***** | MAIN BOARD 3/3 | (POWER BOARD) | (pcb G2927101RT 3/3) | |

| IC 集積回路 | | | |
|---------------------|-----------------------------|-----------------------------------|---------------------------------|
| 15189136RT | (or 15189136) M5218L | Low Noise Dual OP Amp | (Mitsubishi) IC1, 2, 4, 5 |
| 15189188 | M5238L | Low Noise JFET Dual OP Amp | (Mitsubishi) IC8 (CMOS) |
| 15159129HO | HD14053BP | Triple 2-Channel Multiplexer | (Hitachi) IC7 |
| 15189111RT | (or 15189111J1) NJM311D | Precision Voltage Comparator | (JRC) IC6 |
| 15189196 | uPC339C | Quad Comparator | (NEC) IC13 |
| △15199212 | TA7805S | + 5V Voltage Regulator | (Toshiba) IC19 |
| △15199147 | M5F7815L-01 | + 15V Voltage Regulator | (Mitsubishi) IC21 |
| △15199148 | M5F7915L-01 | - 15V Voltage Regulator | (Mitsubishi) IC20 |
| 15179394 | MN4264-12 | 120nS 64K (16Kx4) nMOS D-RAM | (Panasonic) IC15, 16, 17, 18 |
| F5219102RT | NMC27C128BN | 150nS 128K (16Kx8) CMOS OTP-ROM | (NS) IC10 |
| 15239152 | HG62E22R64FS | Gate Array (DSP Chip) | IC14 |
| 15219162 | PCM54HP-V | 16-Bit D/A Converter | (BB) IC9 |
| TRANSISTOR トランジスター | | | |
| 15129115RT | (or 15129114) 2SC1815-GR | Tr for AF amp (Toshiba) | Q4, 10, 11, 12, 13, 15, 17, 20 |
| 15119113RT | (or 15119113) 2SA1015-GR | Tr for AF amp (Toshiba) | Q3, 5, 16, 19 |
| 15129136RT | (or 15129136) 2SC2878-A | Tr for Muting Sw. (Toshiba) | Q1, 2 |
| 15139107RT | (or 15139107) 2SK117-Y | FET for Low Noise Buff. (Toshiba) | Q6, 7, 8, 9, 18, 21 |
| 15139101RT | (or 15139101) 2SK30A-Y | FET for Limiter Sw. (Toshiba) | Q14 |
| DIODE ダイオード | | | |
| △15039111RT | PB154M | Bridge Rectifier | for + 5V |
| 15019420 | RD 3.0ESB2-T | Zener | for limiter circ. |
| △15019209RT | 1N4004 | Rectifier | for + 15V and - 15V |
| 15019125 | 1SS-133 | | D21 - D24 |
| POTENTIOMETER 可変抵抗器 | | | |
| F3229109RT | RK16312AR439-AW | 50KB x 2 | INPUT |
| F3229108RT | RK163111R926-AW | 100KB | PRE EQ (LOW, HIGH) |
| F3229110RT | RK163111R781-AW | 10KB | DECAY |
| F3229111RT | RK16312AR438-AW | 10KB x 2 | OUTPUT (DIRECT, EFFECT) |
| F3299101RT | EVND8803B15 | 100KB Trimmer Pot. | VR2, 3 |
| F3299102RT | EVND8AA03B53 | 5KB Trimmer Pot. | for A/D Offset Adj. |
| | | | VR7 |
| | | | for Decay Time Adj. |
| | | | VR8 |

CAPACITOR コンデンサー

| | | | |
|-------------|--------------|--|-----------|
| △13639194RT | SKR102MIVJ25 | 1000/35 Electrolytic for + 15V and - 15V | C127, 130 |
| △13639154RT | SKR102M1CG20 | 1000/16 Electrolytic for + 5V | C125 |

INDUCTOR, COIL インダクタ, コイル

| | | | |
|-----------|------------------------------|----------------------------------|-------|
| △22445240 | (or 12389716) BL02RN2-R62 | Coil (EMI FIL) for EMI Filtering | L1-L5 |
|-----------|------------------------------|----------------------------------|-------|

CRYSTAL, RESONATOR クリスタル, 発振子

| | | | |
|------------|------------------------------|-------------------|--|
| 12389716M1 | (or 12389716) CSA-8.00MS1 | Ceramic Resonator | |
|------------|------------------------------|-------------------|--|

OPTICAL DEVICE 光関連部品

| | | | |
|------------|-------|--|-----------|
| 15029198RT | 202HD | LED for Power, Bypass and Overload Indi. | D1, 3, 25 |
|------------|-------|--|-----------|

WIRING, CABLE ワイヤリング, ケーブル

| | | | |
|-------|----------|--|---------------|
| ***** | WIRING A | 1 conductor HOOK-UP WIRE | (JUMPER LEAD) |
| ***** | WIRING B | 1 conductor HOOK-UP WIRE | (JUMPER LEAD) |
| ***** | WIRING I | 2 conductors SHIELDED CABLE | (JUMPER LEAD) |
| ***** | WIRING L | 1 conductor HOOK-UP WIRE on PCB soldering side | (JUMPER LEAD) |

TRANSFORMER トランス

| | | | |
|-------------|-----------|---------------------------------|----|
| △G2457101RT | 100V/117V | Power Transformer for 100V/117V | T1 |
| △G2457102RT | 220V/240V | Power Transformer for 220V/240V | T1 |

AC CORD (Installed) 電源コード (据え付け式)

| | | | |
|-------------|---------------|-------------------------|---------------|
| △G3497103RT | LP-50 | with Plug for 100V use | (2-CONDUCTOR) |
| △G3497102RT | SVT LP-30 | with Plug for 117V use | (3-CONDUCTOR) |
| △G3497101RT | LP-21 | with Plug for 220V use | (2-CONDUCTOR) |
| △G3497104RT | LP-23 | with Plug for 240VA use | (3-CONDUCTOR) |
| △G3497105RT | 5722-660-4527 | with Plug for 240VE use | (3-CONDUCTOR) |

SCREW ねじ類

| | | |
|------------|--|-------------------------------|
| ***** | 3x6 Round Head Machine Screw Fe Cm W/Spring Washer | 11 pcs |
| ***** | 7 for MAIN BOARD, 4 for POWER BOARD | |
| ***** | 3x8 Binding Head Machine Screw Fe BC W/Internal Tooth Washer | 15 pcs |
| ***** | 2 for POWER TRANS, 8 for TOP COVER, 5 for REAR PANEL | |
| ***** | 3x16 Round Head Machine Screw Fe BC W/Spring Washer | 2 pcs for STRAIN RELIEF |
| ***** | 4x8 Binding Head Machine Screw Fe BC | 1 for Ground B-6 Lug Terminal |
| H5029806RT | 4x10 Hex Socket Cap Screw Fe BC | 4 pcs for FRONT PANEL |
| 45039502RT | M3 Hex Flange Nut Fe Cm | 4 pcs |
| | 2 for STRAIN RELIEF, 2 for POWER TRANS | |
| ***** | M4 Hex Nut Fe Cm | 1 for Ground B-6 Lug Terminal |
| ***** | M4 External Tooth Washer Fe Cm | 1 for Ground B-6 Lug Terminal |
| ***** | M4x0.45 Internal Tooth Washer Fe BC | 4 pcs for FRONT PANEL |
| H5039756RT | Jack Nut | 4 pcs for JACK |
| ***** | V.R. Accessory (Washer) | 14 pcs for POTENTIOMETER |
| ***** | V.R. Accessory (Nut) | 6 pcs for POTENTIOMETER |
| ***** | SW. Accessory (Washer) | 1 for MODE SWITCH |
| ***** | SW. Accessory (Nut) | 1 for MODE SWITCH |

MISCELLANEOUS その他

| | | |
|-------------|---------------------|-----------------------------|
| △12369410RT | (or 12369410) | |
| △H5039701RT | STRAIN RELIEF 1702B | (CORD BAND or CORD CLAMP) |
| △H2369601RT | 1741BS-2 PIN | (QUICK SLIDE TERMINAL) |
| △F2369402RT | INSULATE | (INSULATION SHEET OF FIBER) |
| SB-0710 | SB-0710 | CORD BUSHING |
| F2359101RT | FOOT | (RUBBER FOOT) |
| F2199101RT | PCB JOINT | |
| 4503970200 | B-6 PIN | (LUG TERMINAL) |

ACCESSORIES (STANDARD) 標準付属品

| | | |
|------------|----------------|------------|
| G6027101RT | OWNER'S MANUAL | (Japanese) |
| G6027102RT | OWNER'S MANUAL | (English) |

NOTES: On mechanical characteristics, connection diagram and the purpose of using, HG62E22R64FS (15239152) is same as HG61H20R36F be used on MT-32 「MULTI TIMBRE SOUND MODULE」 or RV-2 「DIGITAL REVERB」. But electrical characteristics is difference in part, so there is incompatibility.

注：Gate Array HG62E22R64FS(15239152)は、MT-32「MULTI TIMBRE SOUND MODULE」，RV-2「DIGITAL REVERB」等で使用しているreverb chip HG61H20R36F(15229863)と、形状および端子配置そして使用目的は同じです。しかし、一部特性が変更されていますので互換は出来ません。

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

A BLOCK DIAGRAM

B
C

D

E

F

G

H

I

J

K

L

M

N

O

P

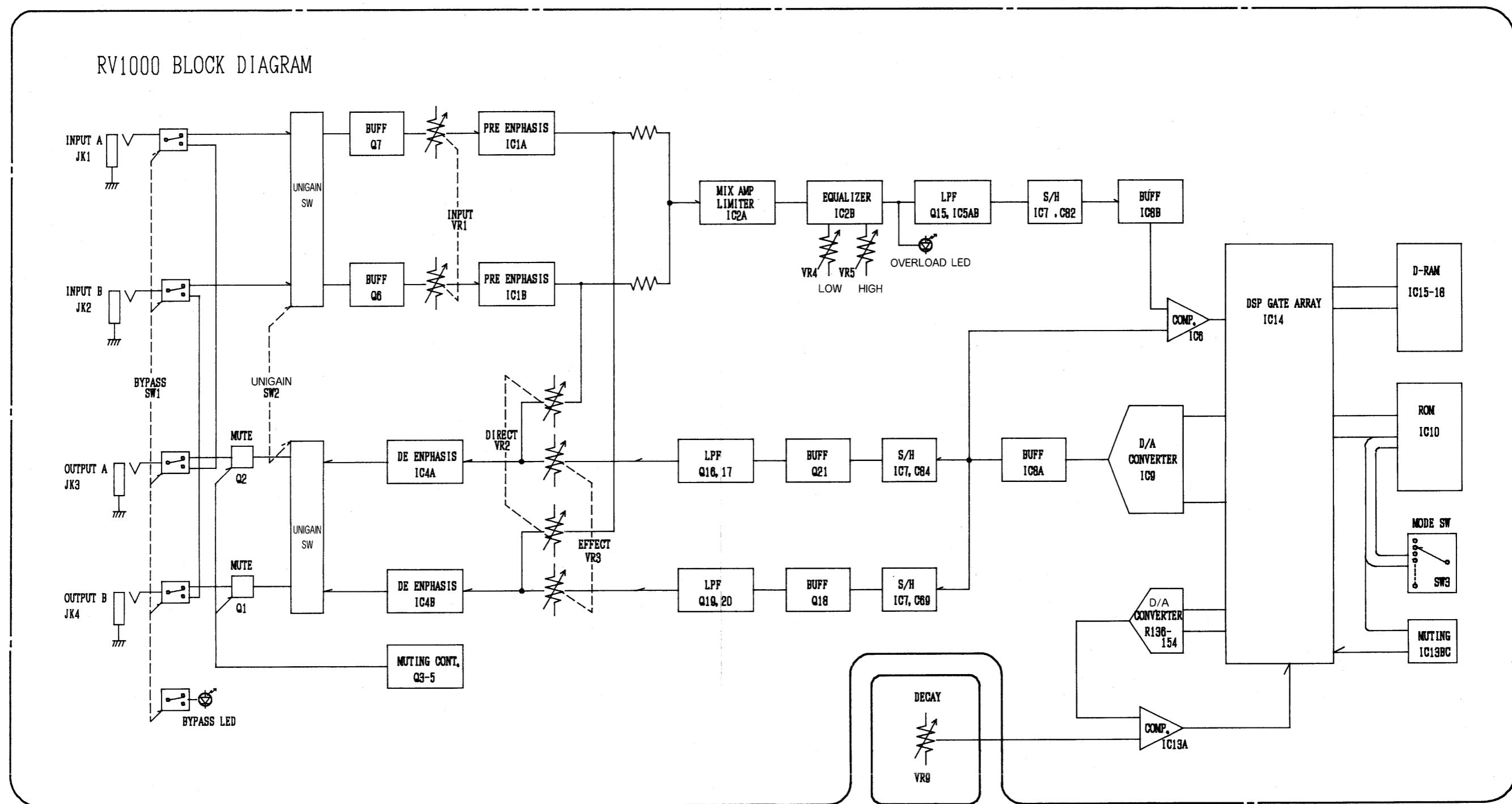
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R

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U



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

A RV1000 BOARD ASSY

ASSY 7572230000
(pcb G2927101RT)

B

C

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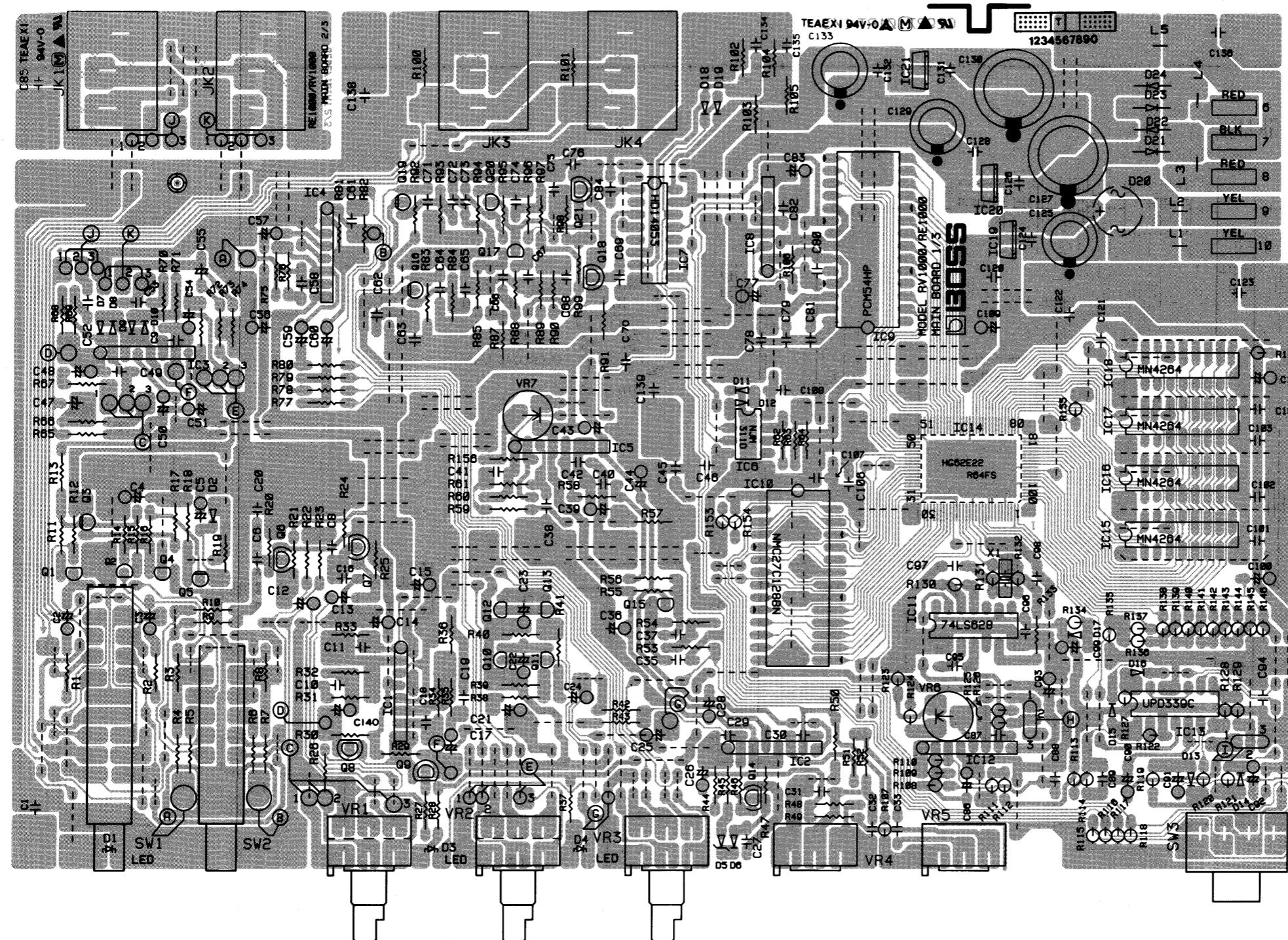
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NOTES:

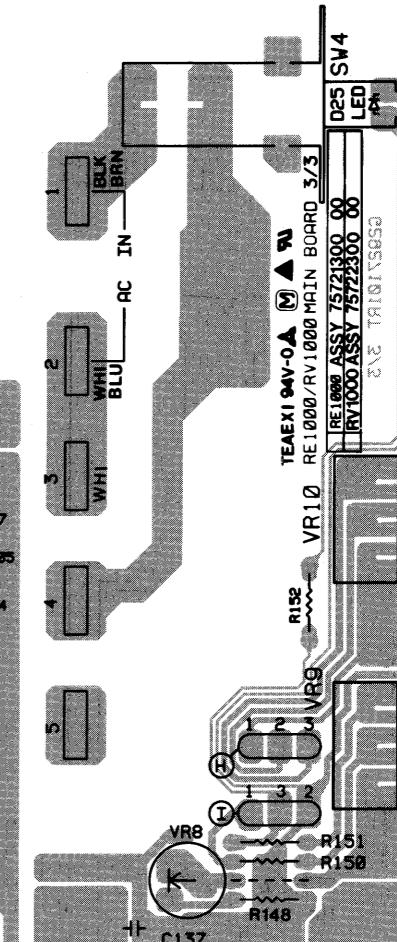
1. Replacement RV1000 BOARD ASSY includes MAIN BOARD 1/3(MAIN BOARD) and MAIN BOARD 3/3(POWER BOARD).
2. The PCB(pcb G2927101RT) use in RV1000 BOARD ASSY is used in RE1000 BOARD ASSY too.
So there are some space do not lay some parts in BOARD ASSY.
That space must be used by RE1000 BOARD ASSY.
3. The alphabet of A and B means connecting point of WIRING A and B for jumper lead.
4. In RV1000 BOARD ASSY, there are some surface (foil side) mountings and a pattern cut.
For details, refer to the SURFACE MOUNTING DIAGRAM FOR BOARD ASSY (P.9).

MAIN BOARD 1/3 (MAIN BOARD)

(pcb G2927101GT 1/3)

MAIN BOARD 3/3 (POWER BOARD)

(pcb G2927101RT 3/3)



View from component side

注：

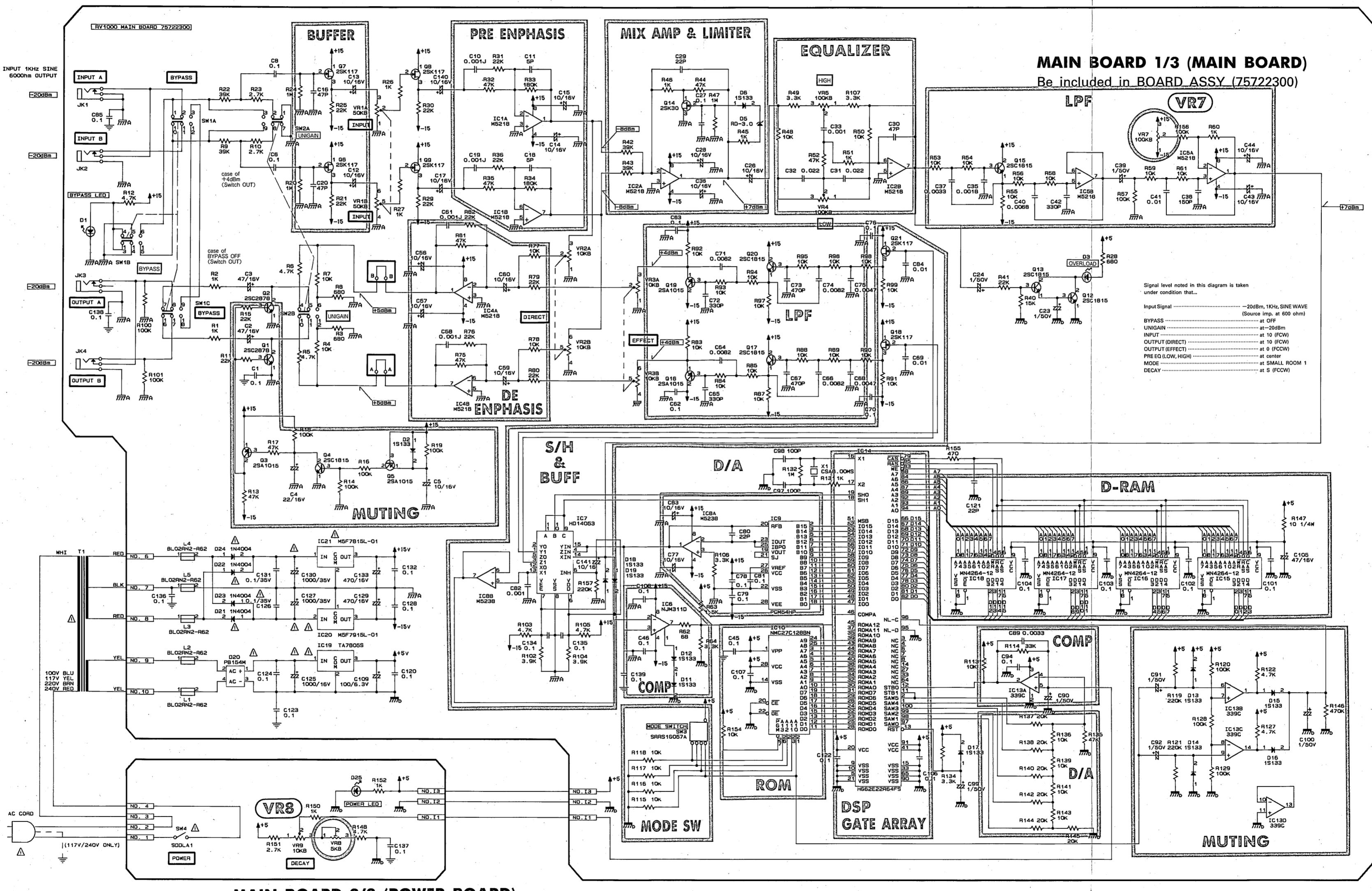
1. 補修用 RV1000 BOARD ASSY(基板組立)は、MAIN BOARD 1/3(MAIN BOARD)と MAIN BOARD 3/3(POWER BOARD)を含みます。
2. RV1000 BOARD ASSY で使う基板(pcb G2927101RT)は、RE1000 BOARD ASSY でも使用されます。その為に、BOARD ASSY 上に、部品の付いていない場所があります。そこは、RE1000 BOARD ASSY で使われます。
3. A と B の文字は、ジャンパー線の WIRING A と B の接続点を表わしています。
4. RV1000 BOARD ASSY には、裏付け部品とパターン・カットが有ります。
詳細については、基板組立の裏付け説明図(P.9)を参照して下さい。

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46

A CIRCUIT DIAGRAM/回路図**B****C****D****E****F****G****H****I****K****L****M****N****O****P****Q****R****S****T****U****V****W****X****Y****Z**

NOTES: The alphabet of A and B means the WIRING A and B for jumper lead.
The alphabet of I at connecting point between BOARDS means the WIRING I to connect between BOARDS.

注: AとBの文字は、ジャンパー線のWIRING AとBを表す。
基板間の接続点にあるIの文字は、基板間を接続する為のWIRING Iを表す。



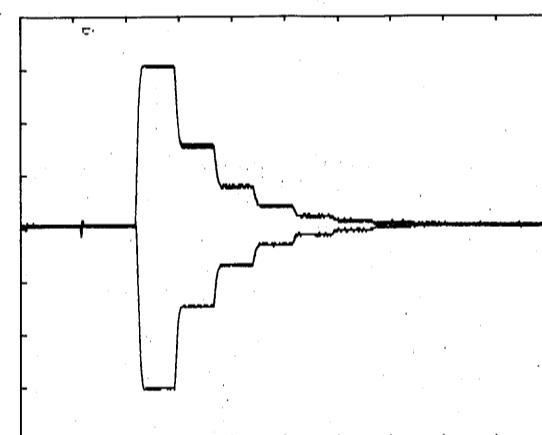
ADJUSTMENT/調整仕様**ADJUSTMENT****1. ADJUST THE OFFSET OF A/D**

Adjuster : VR 7
Observation Point : pin 15 of IC 7
Setting of RV1000:

INPUT 1/2 do not connect anything
MODE SMALL ROOM 1
DECAY S (FCCW)
Other knobs do not care
Setting of Oscilloscope:
RANGE 0.5V/div
5uS/div (about)
AC coupling

1-1. Connect an oscilloscope to pin 15 of IC 7 (COMMON Y of HD14053 MULTIPLEXER) on MAIN BOARD.

1-2. Observing the oscilloscope, adjust VR 7 so that the waveform becomes symmetrical with respect to horizontal line as shown below.

**調整仕様****1. A/D のオフセット調整**

調整箇所 : VR7
観測点 : IC7 の 15番ピン
RV1000の設定：
INPUT 1/2 何も接続しない
MODE SMALL ROOM 1
DECAY S (左端)
その他のつまみ 考慮せず
オシロスコープの設定：
RANGE 0.5V/div
約 5uS/div
AC coupling

1-1: オシロスコープをメイン基板上の IC7 の 15番ピン (HD14053 MULTIPLEXER の COMMON Y) に接続する。

1-2: 波形を観測しながら、下図のように波形が上下対称になるように VR7 を調整する。

0.5V/div
5uS/div
(about)

2. ADJUST THE TIME OF DECAY

Adjuster : VR 8
Setting of RV1000:

INPUT A connect an oscillator or sound source
INPUT B do not connect anything
INPUT suitable position for input signal level
OUTPUT (DIRECT) 0 (FCCW)
OUTPUT (EFFECT) 10 (FCW)
MODE LARGE HALL 2
DECAY S (FCCW)
OUTPUT A connect an amplifier with speaker
OUTPUT B do not connect anything
Other knobs do not care

2-1. Connect an amplifier with speaker to OUTPUT A.

2-2. Apply a percussive sound to INPUT A jack.

The percussive sound is obtained by the audio generator or musical instrument.
Otherwise you apply a normal (continuous) sound to INPUT A jack and you push and pull the plug and so you can obtain the sound like percussive by manual operation.
By the percussive sound, you can recognize the decay time easily.

NOTES: Do not prescribe for input signal (percussive sound) level in particular, but you must set input signal to a suitable level (nominal level) by adjusting the INPUT controls.

2-3. Listening to the effect sound, adjust VR 8 so that the decay time becomes shortest.

Then, the range of trim pot that the decay time becomes shortest is an angle of about 10 degrees. So, you must set it to the middle of it range. If set to the side of it range, time is unsettled because of trim pot data becomes borderline between next data.

2. DECAY 時間の調整

調整箇所 : VR8

RV1000の設定：
INPUT A 発振器または音源を接続
INPUT B 何も接続しない
INPUT 入力信号レベルに対する適正位置
OUTPUT (DIRECT) 0(左端)
OUTPUT (EFFECT) 10(右端)
MODE LARGE HALL 2
DECAY S (左端)
OUTPUT A スピーカ付アンプを接続
OUTPUT B 何も接続しない
その他のつまみ 考慮しない

2-1. OUTPUT A にスピーカ付きアンプを接続する。

2-2. INPUT A ジャックに、パーカッシブ音を加える。パーカッシブ音は、発振器あるいは楽器によって得られる。あるいは、INPUT A ジャックに通常(連続)音を加え、そのプラグを抜き差しする事で、パーカッシブの音をマニュアル操作で得る事ができる。
パーカッシブ音によって、ディケイ時間を容易に認識できる。

注：入力信号(パーカッシブ音)レベルは特に規定しないが、INPUT つまみを調整して、入力信号を適正レベル(ノーマルレベル)に設定する。

2-3. エフェクト音を聞きながら、そのディケイ時間が最小となるように VR8 を調整する。その時、ディケイ時間が最小となる VR8 の範囲は、約10度の角度があるので、その中程にセットする。

もし、端にセットすると、トリマーの値が次の値との境目になるので、時間が不安定となる。

CHECK THE DIRECTION OF THE MODE SWITCHS KNOB

MODE スイッチつまみの向きの確認

CHECK THE DIRECTION OF THE MODE SWITCHS KNOB

There is a regular direction to fix a knob to the MODE switch.

The MODE switch is 16 position BCD rotary switch for 16 effect mode.

Relation of MODE name and BCD output is shown below. The knob has a black line in the graphics to point the current MODE.

1. Connect an oscilloscope to pin21 of IC10 (A10 INPUT of NMC27C128BN PROM) on MAIN BOARD and measure it levels.

While change the connect-position to pin23 (A11 INPUT), pin2 (A12 INPUT), pin26 (A13 INPUT) of same IC in turn, measure each levels.

These levels are High (about 5V dc) or Low (about 0 V dc).

2. Look for matching code with these levels (A10, A11, A12, A13) from the following table for binary coding of switch.

Left entry of the table is MODE name to correspond to 4 bits binary coding.

MODE of the matching code is the current MODE.

3. Fix a knob to the MODE switch so that a black line on the knob direct to the same MODE name on the front panel as detected MODE name.

MODE スイッチつまみの向きの確認

MODE スイッチつまみを取り付けるには、決まった向きがあります。

MODE スイッチは、16種類の効果を切り替える為の、16ポジションのBCDロータリースイッチです。

MODE名とBCD出力との関係は下図に示します。つまみには、現行のMODEを指し示す為の、黒線が付いています。

1. メイン基板上のIC10の21番ピン(NMC27C 128BN PROMのA10入力)にオシロスコープを接続し、そのレベルを測定する。

接続点を同じICの23番ピン(A11入力), 2番ピン(A12入力), 26番ピン(A13入力)と、順番に変えて行き、それぞれのレベルを測定する。

これらのレベルは、High(約5V)かLow(約0V)です。

2. 下に示す、スイッチのバイナリーコーディング(2進コード化)の為の表から、これら(A10, A11, A12, A13)のレベルと一致するコードを探す。

表の左側には、4ビットの2進コードに応じたMODE名が、記入されている。

一致したコードのMODEが、現行MODEです。

3. つまみの黒線が、検出されたMODE名と同じパネル上の名称を指すように、つまみをMODEスイッチに取り付ける。

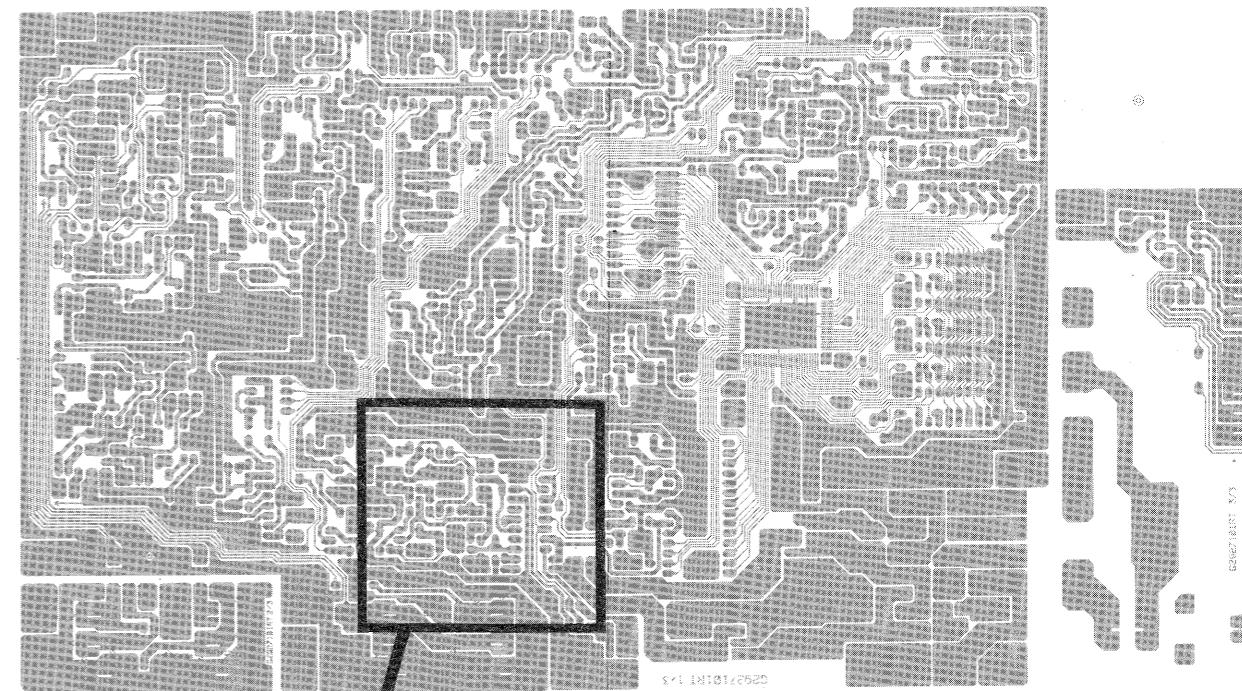
BINARY CODING TABLE FOR MODE SWITCH
(H=5V/L=0V DC)

| MODE/ROM PIN | A10(21) | A11(23) | A12(2) | A13(26) |
|--------------|---------|---------|--------|---------|
| SMALL ROOM1 | L | L | L | L |
| SMALL ROOM2 | H | L | L | L |
| MID ROOM1 | L | H | L | L |
| MID ROOM2 | H | H | L | L |
| MID HALL1 | L | L | H | L |
| MID HALL2 | H | L | H | L |
| LARGE HALL1 | L | H | H | L |
| LARGE HALL2 | H | H | H | L |
| CATHEDRAL | L | L | L | H |
| PLATE1 | H | L | L | H |
| PLATE2 | L | H | L | H |
| GATE REVERB1 | H | H | L | H |
| GATE REVERB2 | L | L | H | H |
| REVERSE GATE | H | L | H | H |
| DELAY1 | L | H | H | H |
| DELAY2 | H | H | H | H |

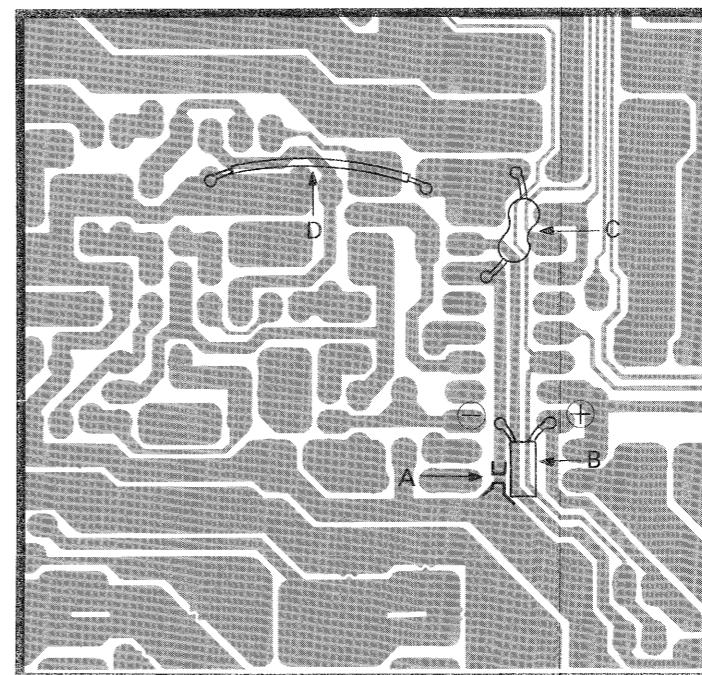
SURFACE MOUNTING DIAGRAM FOR BOARD ASSY

基板組立の裏付け説明図

In RV1000 BOARD ASSY, surface (foil side) mounting and pattern cut are made as shown below.



View from foil side



| | |
|----------------------------|-----|
| A. Pattern cut | x 1 |
| B. Capacitor C141 (10/16) | x 1 |
| C. Resistor R157 (220Kohm) | x 1 |
| D. Jumper Lead (WIRING L) | x 1 |